ABSTRACT

1   The data transfer apparatus and method employs two queue
2   counters to maintain the status of a first-in-first-out buffer
3   memory. A master count (251) indicates the number of entries
4   available for use within the FIFO (410). New data can be
5   allocated to the FIFO only if this master count is non-zero.
6   This master count is decremented (401) upon allocation of new
7   data to the FIFO. A remote count (252) stores the number of
8   data entries stored in the FIFO. This remote count is
9   incremented (413) upon allocation of data to the FIFO and
10 decremented (414) upon reading data from the FIFO. A confirm
11 decrement signal (408) from the remote count triggers an
12 increment of the master count. This two counter technique
13 makes better use of the available bandwidth than the prior art
14 by not requiring a FIFO depth equal the to the data transfer
15 latency. This technique is particularly useful in systems
16 with delays between the data source and data destination and
17 a mismatch of maximum data transfer rates.